



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,714	12/05/2003	Ju-hyung Kim	1568.1081	6907
49455	7590	08/22/2007	EXAMINER	
STEIN, MCEWEN & BUI, LLP			WALKER, KEITH D	
1400 EYE STREET, NW				
SUITE 300			ART UNIT	PAPER NUMBER
WASHINGTON, DC 20005			1745	
MAIL DATE		DELIVERY MODE		
08/22/2007		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/727,714	KIM ET AL.
	Examiner Keith Walker	Art Unit 1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 13 June 2007.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 12,15-17,20,27,28 and 35-38 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 12,15-17,20,27,28 and 35-38 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____.
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.	5) <input type="checkbox"/> Notice of Informal Patent Application
	6) <input type="checkbox"/> Other: _____.

## DETAILED ACTION

### ***Response to Amendment***

Claims 12, 15-17, 20, 27, 28 & 35-38 are pending and have been examined as indicated below.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

1. Claims 12 & 38 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 18 & 28 of copending Application No. 10/737,837. Although the conflicting claims are not identical, they are not patentably distinct from each other because they both claim a can housing an electric generation element with a safety device, a plate attached to a first surface of the can, and a lead unit electrically connecting the first terminal and the second terminal through the safety device. The lead comprises a first material with a cladding of a second material. The only difference between the two pending applications is the

instant application's safety device is a PTC device. This species of safety devices renders obvious the genus class of safety devices.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 12, 15-17, 20, 27, 28 & 35-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,492,058 (Watanabe) in view of US Patent 5,976,729 (Morishita) and US Patent 5,188,909 (Pedicini).

Watanabe teaches using a positive temperature coefficient (PTC) safety device between the terminals (Figs. 10, 15; 8:43-49). The PTC protects the battery by restricting the flow of current when the temperature increases and a rapid increase in the voltage will cause the battery to heat up. A protection circuit is used in conjunction with the PTC to aid in preventing the over-charging and over-discharging (Fig. 1 & 2; 1:13-20). The protection circuit is connected to the safety device and the second terminal (8:65 – 9:5). The intermediate product, as taught by Watanabe is a lithium battery with a safety device located on the exterior of the battery with one end of the lead disposed at a terminal and the other end connected to the safety device (Figs. 1, 2,

10). The PTC element has separate leads coming from the element before assembly with the two leads attached to their respective terminals (Figs. 1 & 10 and relevant passages).

Regarding claims 12 & 38, the claims are seen as product-by-process and even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process (MPEP 2113). The final product claimed is a battery with two terminals having two leads and a PTC element located between the leads. One lead is an output lead made of a first material and the second lead is the first lead made of a first material and a cladding material. The number of sub-leads on the different parts used to assembly the battery is a process of making the battery and does not patentably distinguish the instant claims over the prior art.

Regarding claims 27 & 28, the claims are seen as product-by-process and even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process (MPEP 2113). The method of forming the weld is not germane to the issue of patentability of

the device itself and therefore this limitation has not been given patentable weight.

Watanabe teaches spot-welding the materials together, producing an end product that has been welded and is not patentably distinct from the instant claims.

Watanabe is silent to the materials used for the leads and the housing.

Like Watanabe, Morishita teaches a lithium ion cell with an external protective circuit for controlling the cell voltage to prevent overcharge and over-discharge (1:10-15). The lithium cell has a first surface of the outer can and a second surface being the lid (4:1-16). It is obvious to one skilled in the art to attach one electrode to a first surface of the case and the opposite electrode to a second surface to make a battery with external contacts, as shown by Pedicini (5:52-66). The outer can be made from aluminum alloy and the lead is made from a first material nickel and a second material of aluminum (5:30-38). The components are welded together using ultrasonic welding (2:37-40). Further, Morishita teaches the use of different materials in the making of the leads with alternate welding techniques. As stated above, the outer can and lead are made of the same material and attached using ultrasonic welding so a smaller heat value is required, thereby preventing the occurrence of pinholes and cracks (2:37-53). Two-layer cladding for the lead plate is also used for current utilization (5:22-27). So regarding the different first and second materials used as leads, the use of multiple materials is taught and it would have been obvious to one having ordinary skill in the art at the time the invention was made to pick lead materials based on the use in the battery and the style of welding needed. It is held to be within the general skill of a

worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice (*In re Leshin*, 125 USPQ 416).

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the lithium cell of Watanabe with the battery casing and lead material of Morishita to understand what materials should be used for the leads in the production of the lithium battery with a protective device.

Watanabe is silent to the PTC element being located on the lead material.

Watanabe teaches locating the PTC element along the side of the battery, between the output lead and the first lead. The PTC element is a safety device that increases its resistance in response to a rise in temperature. So as the temperature of Watanabe's battery rises, the resistance of PTC element also increases to protect the battery. If the PTC element is located right next to the battery then the heat from the battery is transmitted to the PTC element quickly and without any insulation effects from other components. If the PTC element is located away from the battery then the function is the same, just the time frame or the amount of heat required to activate the element is changed. Watanabe also teaches locating the PTC element away from the battery by placing it on a circuit board that is then covered with insulating paper before the element is placed next to the battery (Fig. 1; 1:29-38). In either case, the function of the PTC element is the same, to increase the resistance value in relation to the rise in temperature. It would be obvious to one skilled in the art to choose the correct PTC element for the proper placement in the battery. In other words, if the element was located adjacent to the battery then the element would have a higher heat threshold. If

the element is located away from the battery body, separated by a circuit board, insulating paper or a couple of metal layers, then an element with a lower or more sensitive temperature threshold is used since it would take more heat or a longer time to transfer the same heat value as if the element was adjacent to the battery.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the PTC element located next to the body of the battery or away from the body as taught by Watanabe with a location being on a lead, such that the lead is between the battery and the PTC element, since the relocating the element, to serve the same purpose and in the same manner, is considered well within the means of one of ordinary skill in the art. Furthermore, Morishita teaches locating the PTC element on top of a lead, so that it doesn't touch the battery (Figs. 3 & 7).

Watanabe is silent to the use of a safety vent.

Pedicini teaches sealing the opening of the battery with a cap assembly that has a vent for the cell (5:52-66).

The motivation to use a cap with a vent is to provide a means for the expulsion of any internal gas pressure created by the battery. The pressure will not only cause a decline in the effectiveness of the battery but can cause the battery to rupture.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the battery of Watanabe with the cap vent to promote a safer and more efficient battery.

***Response to Arguments***

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Keith Walker whose telephone number is 571-272-3458. The examiner can normally be reached on Mon. - Fri. 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

K. Walker

~~MARK RUTHKOSKY~~  
~~EXAMINER~~

MARK RUTHKOSKY  
PRIMARY EXAMINER

*Mark Ruthkosky*

8/20/07